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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,144	09/23/2003	Esko Alanen	881B.0006.U1(US)	1370
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HARRINGTON & SMITH 4 RESEARCH DRIVE, Suite 202 SHELTON, CT 06484-6212			EXAMINER NGUYEN, HUONG Q	
			ART UNIT 3736	PAPER NUMBER
			MAIL DATE 04/12/2011	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/670,144	Applicant(s) ALANEN ET AL.	
	Examiner HELEN NGUYEN	Art Unit 3736	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 11-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 11-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/25/2011</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/25/2011 has been entered.
2. Claims 13-19 are new. **Claims 1-8 and 11-19** remain pending and under prosecution.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 1/25/2011 is/are acknowledged. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Objections

4. **Claims 16 and 19** are objected to because of the following informalities: "the dermis" lacks proper antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. **Claims 5 and 15** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Said claims recite that using the frequency of 20-50 MHz concentrates the electric field in the uppermost layers of the skin, thus enabling measurement of edema at layers of the skin beyond superficial layers of the skin. However, as elaborated at length in applicant's most recent response, the invention as best understood by the examiner was intended to measure edema in tissue because as argued by applicant, edema within tissue is not possible. Therefore, how is it that the edema may still be measured within the uppermost skin layers as claimed? This has also been disclosed in applicant's disclosure (p.4 top). Applicant is respectfully requested to clarify the meaning of the claims and the invention in this respect.

8. **Claims 1-8 and 12-19** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding Claims 1 and 7, the recitation of "electronic field" does not make sense within the context of an electromagnetic probe. It appears that applicant wishes to recite "electric field" (as used in the specification), however, an electric field is vastly different than an electronic field.

9. Claims 1 and 7 also recite the electronic field to penetrate “up to the subcutaneous fat tissue.” Such phrasing renders the claim unclear because it suggests that the fat tissue exists above the skin. It is suggested that applicant recite “the electric field to penetrate past the skin to the subcutaneous fat tissue underneath” to clarify the claims.

10. Regarding Claim 7, it is unclear what is referred to by the "measured values" calculated by the unit. Also, it is recommended that the electrodes be positively claimed, i.e. "the probe having two electrodes separated by a distance, etc."

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Malicki et al (US Pat No. 4918375) in view of Campbell et al (US Pub No. 20030015024), further in view of Campbell et al and Measurement.

13. Malicki et al disclose a method of measuring substrate moisture comprising:

placing a coaxial electrode on a substrate (Col.2: 12-18);

generating a first signal from an oscillator (Col.2: 18-20), wherein the frequency of the first signal is about 20 to 500 MHz (Col.1: 45-46);

transmitting a first portion of the signal of the first signal to the probe and through the substrate (Col.2: 21-24);

receiving a reflected signal from the substrate through the probe (Col.2: 29-31);

leading the reflected signal to a first input of a phase detector;
transmitting a second portion of the first signal to a second input of the phase detector (Col.2: 24-29);
operating the phase detector in a saturated state, wherein signal amplitudes from the reflected signal and the second portion of the first signal form the saturated state;
measuring the phase difference, i.e. time delay, between the reflected signal and the second portion of the signal (Col.2: 31-34);
calculating a dielectric constant from the phase difference (Col.2: 35);
calculating a water content of the substrate based on the dielectric constant (Col.2: 36).

14. While it is submitted that Malicki et al necessarily disclose the use of a phase detector as a necessary electronic component to perform the above method, it is noted that Campbell et al (2003') teach the use of phase detector to analogously detect a water content of a substrate (claim 6 p.3). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include with the method of Malicki et al a phase detector as taught by Campbell et al to effectively provide an output of the water content of the substrate.

15. However, Malicki et al and Campbell et al do not disclose said method used for measuring a water content of the skin such that said probe is placed on the skin during use. Measurement, Penetration, or Campbell et al (6370426) teach an analogous signal generating method used to measure a water content of the skin wherein a coaxial electrode is placed on the skin. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the method of Malicki et al as

modified by Campbell et al to measure the water content of the skin as taught by Campbell et al, wherein in use the coaxial electrode is placed on the skin and the frequency of the signal used will penetrate the skin and subcutaneous fat tissue (see Measurement above), as an obvious useful application of the method.

Allowable Subject Matter

16. **Claims 1-8 and 12-19** would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph and claim objections, set forth in this Office action.

17. As noted in the §112 rejection above, there is question as to whether the invention is meant to only measure edema in tissue and not within the skin. Pending applicant's response, the now vacated art rejections may be again called upon to reject the claims if it is not sufficiently elaborated upon that the invention does not only measure edema within tissue.

Response to Arguments

18. Applicant's arguments with respect to claims 1-8 and 12-19 have been fully considered and are persuasive. The rejection has been withdrawn.

19. Applicant's arguments with respect to claim 11 have been fully considered but they are not persuasive. Malicki et al teaches a method of determining water content in a substrate using electromagnetic waves. Malicki et al teach that said method exists to determine water content through electromagnetic waves. Campbell et al teach an electromagnetic probe to measure the water content of the skin. It is noted that the

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method does not recite that "tissue edema" is being measured (except in the preamble, which in this situation does not add to the method), rather merely that "water content of the skin" is measured. It is submitted that it would have been obvious to use the method of Malicki et al on skin because it is well known that the generating, transmitting, and receiving of the signal would be the same regardless of the substrate.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HELEN NGUYEN whose telephone number is (571)272-8340. The examiner can normally be reached on Monday - Friday, 9 am - 6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on 571-272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/H. N./
Examiner, Art Unit 3736

/Max Hindenburg/
Supervisory Patent Examiner, Art Unit 3736